Amendment to the Specification:

These paragraphs will replace all prior versions of paragraphs bearing the same paragraph numbers in the application.

[021] For this document, the term "OAM-capable" will be understood to mean capable of processing OAM DTUs or some other specialized DTU used for maintenance and/or performance determination purposes. Processing such DTUs may involve producing such DTUs, determining network segment performance from the DTUs and determining network or network segment faults by the receipt ~~of~~ or non-receipt of such DTUs. Based on the above, a "non-OAM capable" node will thus be nodes that are unable to process such specialized DTUs.

[035] Figure 2 is a flow chart illustrating the steps taken in the process outlined above ~~is illustrated~~. The first step is step 230. This step chooses the primary LSP to be segmented. Step 240 determines the path in the primary LSP for an LSP segment. As an example, in Figure 1, if the primary LSP is from LSR0 to LSR3 then the second step would be to determine whether the LSP segment passes through LSR0, LSR1, and LSR2 ~~or~~ , through LSR0, LSR1, LSR4, or through LSR0, LSR1, LSR6 and LSR4 and, finally, LSR 3. After this, the next step (step 250) is that of provisioning or allowing for an LSP segment to be established. This step involves determining the label to be assigned to the LSP segment and allocating resources for this label to be assigned. Step 260 involves notifying the other nodes and LSRs in the MPLS network about the LSP segment being created. This notification is normally done using LDP. This notification notifies the nodes in the path of the LSP segment about how packets having the label assigned to that LSP segment is to be forwarded and or processed.

[039] As can be seen in Figure 4, the router 400 has three main components: an input module 410, a switch core 420, and an output module 430. The input module 410 receives DTUs from ~~downstream~~ upstream nodes. The switch core 420 then switches these DTUs to the proper egress ports on the output module 430. Prior to forwarding the received DTU, the LSR processes the DTU. If the DTU is an OAM DTU, then the LSR may ~~response~~ respond to

the OAM DTU to indicate that the OAM DTU has arrived. It is at this point that the router implements the invention as explained above. The implementation can be carried out by the output module 430 prior to transmitting the OAM DTUs across the MPLS domain. Alternatively, an extra ~~MPLS~~ OAM module 440 may be provided between the output module that would process the OAM DTUs and ensure that such OAM DTUs are properly processed, sent or responded to. Furthermore, such an OAM module would ensure that the MPLS transport of the OAM DTUs is properly provisioned. To this end, the ~~MPLS~~ OAM module would handle the signalling and LDP execution to implement the invention. The OAM module would therefore perform the processing, signalling, encapsulation, and service label allocation that are outlined above. It should be clear that the above description for Figure 4 applies to a source node for an OAM DTU. This source node LSR would originate and transmit the OAM DTU to a destination ~~DTU~~ LSR that would receive the OAM DTU.